

12-5-05

534,738

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
20 October 2005 (20.10.2005)

PCT

(10) International Publication Number  
WO 2005/097595 A1

(51) International Patent Classification<sup>7</sup>: B64G 1/66, H01Q 1/28, 15/16

(21) International Application Number: PCT/GB2005/050045

(22) International Filing Date: 1 April 2005 (01.04.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
04252099.9 8 April 2004 (08.04.2004) EP  
0408005.7 8 April 2004 (08.04.2004) GB

(71) Applicant (for all designated States except US): EADS ASTRIUM Limited [GB/GB]; Gunnels Wood Road, Stevenage Hertfordshire SG1 2AS (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): BROOKS, Raymond, John [GB/GB]; EADS ASTRIUM Limited, Gunnels Wood Road, Stevenage Hertfordshire SG1 2AS (GB). BAKER, Trevor, Charles [GB/GB]; EADS ASTRIUM Limited, Gunnels Wood Road, Stevenage Hertfordshire SG1 2AS (GB).

(74) Agent: BAE SYSTEMS plc, Group IP Dept; P.O. Box 87, Lancaster House, Farnborough Aerospace Centre, Farnborough Hampshire GU14 6YU (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

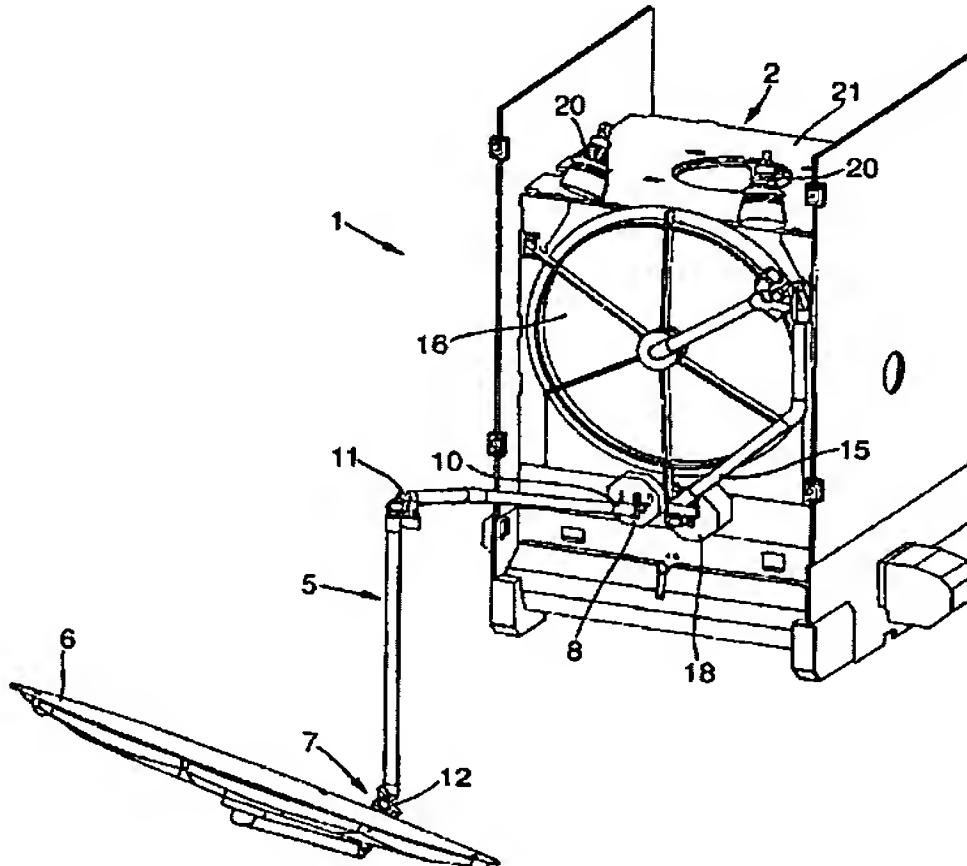
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

— with international search report

[Continued on next page]

(54) Title: DEPLOYABLE BOOM



WO 2005/097595 A1

(57) Abstract: This invention concerns improvements relating to deployable booms. An articulated boom is provided comprising a support arm with bend defining a number of hingedly-connected joints, the arm being adapted and arranged to carry an antenna reflector so that in use, the reflector can move between a first stowed position in which the reflector is in folded condition and a second deployed position in which the reflector is in deployed condition. This invention extends to spacecraft (2) incorporating into one or more of its sides a plurality of such articulated booms (5, 15). The support arms of the booms can be advantageously positioned at the circumference of the associated reflectors (6, 16) when in stowed condition, such as to allow the reflectors to be neatly stacked together within a space defined by the launch vehicle fairing (not shown). It is to be appreciated that the proposed structure finds utility in the support deployment of multiple antenna reflectors in various space missions if desired, and bears structural advantage in terms of weight saving, simplicity of design (by taking up less accommodation space) and efficient accommodation of its apertures/reflectors.



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*